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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 994,053	11 27 2001	Yoshitomo Nagahashi	216553US2CONT	1298

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ESPLIN, DAVID B

ART UNIT PAPER NUMBER

2851

DATE MAILED: 05 13 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,053

Examiner

D. Ben Esplin

Applicant(s)

NAGAHASHI ET AL.

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 16-23 and 36 is/are allowed.
- 6) ☐ Claim(s) 1-5, 7-10, 14, 15, 24-27, 29, 32-34, 37-39 and 41-43 is/are rejected.
- 7) ☐ Claim(s) 6, 11-13, 25, 26, 28, 30, 31, 35 and 40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 27 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Right to Draw (PTO-893)
- 3) ☐ Notice of Draftsperson's Right to Draw (PTO-893)
- 4) ☐ Interview Summary (PTO 413, Paper No. ____)

DETAILED ACTION

Information Disclosure Statement

The disclosures of prior art by Applicant, filed 2/26/02 and 7/23/02 respectively, do not contain PTOL 1449 forms. Consequently, while Examiner has considered the documents provided by Applicant that are contained within the file wrapper, there are no forms signed by Examiner to express the each individual reference has been considered. Further, there are no photocopies of initialed and signed 1449 forms accompanying this Office Action.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the embodiment in which the machine chamber and the exposure chamber are formed within a same chamber (claim 6), and the embodiment in which another chamber that houses a mask transportation system includes a blow port for supplying air conditioned gas into the exposure chamber (claims 25 and 26) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 6, 25 and 26 are objected to because of the following informalities:

Referring to claim 6, the embodiment in which the exposure chamber and the machine chamber are formed in a same chamber is not supported by either the drawings, or the specification. If Applicant is referring an art recognized "clean room" as the same chamber then the claim language should be amended to describe this element more accurately. If Applicant is referring to an embodiment in which both the exposure chamber and the machine chamber are formed inside of an actual environmental control chamber, and not just a room with certain sanitation and air flow regulations, this would be distinguishable over the prior art.

Regarding claims 25 and 26, the embodiment in which another chamber that houses a mask transportation system includes a blow port for supplying air conditioned gas into the exposure chamber is not described in the specification or shown in the drawings. Examiner believes that in claim 24, from which both 25 and 26 depend, Applicant was referring to the previously discussed machine chamber as "another chamber", and thus include the limitation of the blow port for providing air conditioned gas into the exposure chamber.

specification and shown in the drawings as being the chamber 18 and which includes no such blow port.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 7, 14, 15, 24-27, 29, and 32-34 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,320,646 to Mouri.

FIG. 2 of Mouri shows an exposure apparatus that includes an exposure apparatus main body, an exposure chamber (booth 214), an air conditioner (cooler 215), a machine chamber (device 210), a supply path of gas for air conditioning (leaving blower 217 through a bottleneck (not labeled) and entering the exposure chamber), a first chemical substance removing filter (filter g), an exhaust path (return path ra) and a second chemical substance removing filter (filter cf). Mouri further shows the machine chamber provided with an outside air inlet (outside-air inlet oa) and a third chemical substance removing filter (filter cf).

Examiner's note: The inventor's reply to these claims

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mouri as applied to claims 1, 2, 7, 14, 15, 24-27, 29, and 32-34 above, and further in view of U.S. Patent No. 5,508,518 to Kendall.

While Mouri does show a supply port and a return path for connecting the machine chamber to the exposure chamber, Mouri is silent concerning the use of a detachable connection, like a bellows-like member, for forming these connectors. However, Kendall very clearly teaches that the use of a bellows-like member (bellows 56 and 58) was well known in the art for connecting environmentally controlled chambers and providing the benefit of vibration isolation (see abstract and FIG. 1). Therefore, it would have been obvious to provide bellows-like members as the supply port and return path of the apparatus of Mouri, in order to provide vibration isolation between the machine chamber and the exposure chamber.

Neither Mouri, nor Kendall expressly teaches that the bellows forming the supply port and return path should be detachable. But one of ordinary skill in the art would recognize that trying to form the bellows integral to both the machine chamber and the exposure chamber

is not a novel idea. One could form the machine chamber and exposure chamber separately and then assemble, or attach them,

Claims 9, 10, 37-39, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document 6-176998 to Kazushi et al. in view of Mouri.

FIG. 1 of Kazushi shows an exposure apparatus that includes an exposure apparatus main body, an exposure chamber (chamber housing reticle library 11 and exposure apparatus main body), an air conditioner (cooler 2A), a machine chamber (machine chamber 2), a supply path of gas (first duct 5A and dead space of exposure chamber, and second duct 5B and dead space above wafer carrier 13), a first chemical removing filter (filter box 3a), and an exhaust path (6). Kazushi is silent concerning the inclusion of a second chemical substance removing filter, but Mouri teaches that a chemical substance removing filter placed in an exhaust path of gas that is going to be reused by an air conditioning unit was well known in the art for purifying the gas prior to cooling and/or heating. In view of the teaching of Mouri, it would have been obvious to include a second chemical substance removing filter in the exhaust path of Kazushi, in order to purify exhausted gas prior to being reused by the apparatus.

Further, the apparatus of Kazushi lacks a filter in the supply path upstream of the division of the supply path. However, Mouri shows that a filter (filter g) disposed upstream from a supply path for supplying gas to multiple chambers (exposure chamber and intake port 5a) was well known for purifying gas prior to introducing it into the processing area. Thus, it would have been obvious to provide a filter in the supply path of Kazushi upstream from the division of the supply path in order to purify the gas prior to introducing it into the processing area.

Allowable Subject Matter

Claims 16-23 and 36 are allowed.

Claims 11-13, 28, 30, 31, 35, and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Referring to claims 11, 16, 23, 28, 35, and 36, an exposure apparatus including a controller that controls the surface temperature of a cooler so that condensation does not occur, along with the rest of the structure and function of these claims, is not suggested in the prior art.

Regarding claims 12, 13, 30, and 31, an exposure apparatus including another air conditioner that performs air conditioning of a space, including a substrate stage and an interferometer, separately, along with the other limitations recited in these claims, is not taught by the prior art.

In reference to claim 40, an exposure apparatus including a third chamber that houses a mask transportation system, and a third return duct for exhausting gas therefrom, in conjunction with the other elements described in this claim, is not disclosed in the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,356,338 to Arakawa discloses an exposure apparatus including a machine chamber and an exposure chamber as defined by the present application.

U.S. Patent No. 5,871,587 to Hasegawa et al. discloses a processing system including a gas supply system for supplying gas to multiple chambers and recycling the gas with chemical filters on the exhaust and inlet of the system.

U.S. Patent No. 6,208,406 to Nakashima discloses an exposure apparatus including a machine chamber and an exposure apparatus and with chemical filters on the cooling exhaust and inlet.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Ben Esplin whose telephone number is (703) 305-4022. The examiner can normally be reached on Mon.-Fri. (8am-4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 305-5000.

Art Unit: 2851

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



DBE

May 8, 2003



RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800